VOL 7 NO 4 OCT-DEC 2004

NAVAL MEDICAL SURVEILLANCE REPORT

NMSR

Table of Contents

www-nehc.med.navy.mil/prevmed/epi/nmsrpage.htm

From the Population Health Director

CAPT (sel) James E. LaMar, MC, USN(FS)

As winter takes hold in Portsmouth, NEHC Population Health has transitioned leadership and has been very busy. We have bid farewell to CAPT Bruce Bohnker as he moves on to retirement. We thank him for his leadership and dedication to Preventive Medicine. He truly made great efforts to publish analyses and lessons learned from the data NEHC collects. We also lost Dr. Danielle Dell, as she moved to Philadelphia to accept a position with a large pharmaceutical company.

We are working to analyze the PRIMS database that contains Navy personnel physical fitness testing results dating back to 2000. The ultimate goal is to summarize this data for each Navy community and for each individual command. This effort will support the Department of the Navy's goal to improve the fitness and wellness of all active duty members and their families.

The Health Promotion team is wrapping up efforts on the "Get Moving Navy" and "Oceana-Dam Neck IN MOTION" pilot programs. These projects are part of the CNO's "Human Capital Management" initiative. Our findings show that management at the highest level must support health and wellness efforts to be successful. All efforts must be coordinated with key leaders of the military community with public health and health promotion professionals serving as subject matter experts.

The Preventive Medicine team has also been busy providing support to the DoD for ongoing *Acinetobacter baumannii* surveillance using electronic laboratory results reports from CHCS. This marks the first step towards building Electronic Laboratory Reporting (ELR) and surveillance capabilities in the Navy. In the future, it is hoped that ELR will support ongoing reportable medical event surveillance as well as development of antibiotic resistance surveillance efforts.

A couple of reminders: The Navy Epidemiology Board is meeting as part of the annual NEHC conference. This group provides an excellent forum to answer questions and suggest policy regarding preventive medicine and communicable disease control efforts. BUMEDNOTE 6230, the new immunization "instruction", was released in December! This is an excellent reference as well as providing timely guidance and the latest information on required immunizations and adverse reporting requirements.

As I write this in January 2005, 83 members of the NEHC community are either deployed supporting the Global War on Terrorism or tsunami relief efforts in the Far East. NEHC Population Health is anxious to provide these teams, as well as all Navy and Marine Corps medical activities, with the tools they need to improve medical surveillance and preventive medicine/threat assessment efforts. Please visit the NEHC website to find the latest information, and drop us a note if there is something else you need. We are eager to improve our products, but need your comments and suggestions for guidance.

Naval Medical Surveillance Report

Executive Editor: CAPT (sel) James E. LaMar, MC, USN(FS)
Editors: Ms. A. Riegodedios, MSPH
LCDR Annette M. Von Thun, MC, USNR
Wendi Bowman, MPH
Assistant Editor Ms. N. D. Branch

Submissions and inquiries regarding content or material to be considered for publication should be directed to the Editor, Naval Medical Surveillance Report, Navy Environmental Health Center, Population Health Directorate, 620 John Paul Jones Circle Suite 1100, Portsmouth, VA 23708-2103. Guidelines for submissions are located at http://www-nehc.med.navy.mil/prevmed/epi/nmsrpage.htm or e-mail epi@mar.nehc.med.navy.mil. To be added to the mailing list, contact the Navy Environmental Health Center at DSN 377-0702 Comm: (757) 953-0702.

POPHEALTH POC: CAPT LaMar: (757) 953-0710, Ms. N. D. Branch: (757) 953-0702

Views and opinions expressed are not necessarily those of the Department of the Navy

DISCLAIMER: Every effort has been made to provide accurate, up-to-date information. However, the knowledge base is dynamic and errors can occur. By using the information contained in this list the reader assumes all risks in connection with such use. NEHC shall not be held responsible for errors, omissions nor liable for any special, consequential or exemplary damages resulting, in whole or in part, from any reader's use or reliance upon, this material.

Acinetobacter baumannii Infections Among Patients at Military Medical Facilities Treating Injured U.S. Service Members, 2002-2004

Editor's Note: The following article is a reprint from the Center's for Disease Control and Prevention Morbidity and Mortality Weekly Report November 19, 2004, Vol 53, No 45. It has been reformatted to accommodate NMSR publication.

Acinetobacter baumannii is a well known but relatively uncommon cause of healthcare-associated infections. Because the organism has developed substantial antimicrobial resistance, treatment of infections attributed to *A. baumannii* has become increasingly difficult (*1*). This report describes an increasing number of *A. baumannii* bloodstream infections in patients at military medical facilities in which service members injured in the Iraq/ Kuwait region during Operation Iraqi Freedom (OIF) and in Afghanistan during Operation Enduring Freedom (OEF) were treated. The number of these infections and their resistance to multiple antimicrobial agents underscore 1) the importance of infection control during treatment in combat and healthcare settings and 2) the need to develop new antimicrobial drugs to treat these infections.

During January 1, 2002-August 31, 2004, military health officials identified 102 patients with blood cultures that grew *A. baumannii* at military medical facilities treating service members injured in Afghanistan and the Iraq/Kuwait region. All of these cases met the criteria for *A. baumannii* bloodstream infection on the basis of criteria established by CDC's National Nosocomial Infection Surveillance (NNIS) system (*2*). Of these 102 cases, 85 (83%) were associated with activities during OIF and OEF. Most of the infections were reported from Landstuhl Regional Medical Center (LRMC), Germany (33 patients: 32 OIF/OEF casualties, one non-OIF/OEF), and Walter Reed Army Medical Center (WRAMC), District of Columbia (45 patients: 29 OIF/OEF casualties, 16 non-OIF/OEF). In both facilities, the number of patients with *A. baumannii* bloodstream infections in 2003 and 2004 exceeded those reported in previous years (one case during 2000-2002 at LRMC; two cases during 2001-2002 at WRAMC).

Of the 33 patients with *A. baumannii* bloodstream infections at LRMC, 32 (97%) were men; the median age was 30 years (range: 19-72 years). Thirty (91%) patients sustained traumatic injuries in either the Iraq/Kuwait region (25) or in Afghanistan (five). The majority (67%) were active duty members of the U.S. Armed Forces. Thirty-two (97%) were transferred directly to the LRMC intensive care unit (ICU) from a combat theater military medical facility. In 22 (67%) of these patients, bloodstream infections were detected from blood cultures obtained within 48 hours of ICU admission.

Of the 45 patients with *A. baumannii* bloodstream infections at WRAMC, 39 (87%) were males; the median age was 39 years (range: 6-86 years). Twenty-nine (64%) patients sustained traumatic injuries in the Iraq/Kuwait region. Of these, 18 (62%) had bloodstream infections detected from blood cultures obtained within 48 hours of hospital admission after transfer from a combat theater medical or other military medical facility.

Antimicrobial susceptibility testing (AST) was performed by using microdilution. Results of 33 *A. baumannii* isolates from LRMC and 45 isolates from WRAMC indicated widespread resistance to antimicrobial agents commonly used to treat infections with this organism. AST results, expressed as a percentage of susceptible isolates, were as follows:

- imipenem (LRMC: 87%; WRAMC: 82%)
- amikacin (LRMC: 80%; WRAMC: 48%)
- ampicillin/sulbactam (LRMC: 8%; WRAMC: 35%)
- piperacillin/tazobactam (LRMC: 0%; WRAMC: 27%)
- cefepime (LRMC: 0%; WRAMC: 22%)
- ciprofloxacin (LRMC: 3%; WRAMC: 20%).

Among the WRAMC isolates, 13 (35%) were susceptible to imipenem only, and two (4%) were resistant to all drugs tested. One antimicrobial agent, colistin (polymyxin E), has been used to treat infections with multidrug-resistant *A. baumannii*; however, AST for colistin was not performed on isolates described in this report.

In addition to LRMC and WRAMC, three other military treatment facilities have identified *A. baumannii* bloodstream infections in service members injured in Iraq, Kuwait, and Afghanistan: U.S. Navy hospital ship (USNS) Comfort (11 patients), National Naval Medical Center (NNMC), Bethesda, Maryland (eight), and Brooke Army Medical Center (BAMC), San Antonio, Texas (five).

Reported by: *PT Scott, MD, Army Medical Surveillance Activity, District of Columbia. K Petersen, DO, National Naval Medical Center, Bethesda, Maryland. J Fishbain, MD, DW Craft, PhD, AJ Ewell, PhD, K Moran, MD, DC Hack, MD, Walter Reed Army Medical Center, District of Columbia. GA Deye, MD, S Riddell, PhD, G Christopher, MD, Landstuhl Regional Medical Center, Landstuhl, Germany. JD Mancuso, MD, BP Petruccelli, MD, US Army Center for Health Promotion and Preventive Medicine. T Endy, MD, L Lindler, PhD, Walter Reed Army Institute of Research, Silver Spring, Maryland. K Davis, MD, Brooke Army Medical Center, San Antonio, Texas. EG Milstrey, PhD, US Army 30th Medical Brigade. L Brosch, MD, Uniformed Svcs Univ of the Health Sciences, Bethesda, Maryland. J Pool, MS, Office of the Surgeon General of the Army. CL Blankenship, MD, Office of the Surgeon General of the Navy. CJ Witt, DVM, JL Malone, MD, Global Emerging Infections Surveillance and Response System; DN Tornberg, MD, Office of Health Affairs, US Dept of Defense. A Srinivasan, MD, Div of Healthcare Quality Promotion, National Center for Infectious Diseases, CDC.*

Editorial Note

A. baumannii are a species of gram-negative bacteria commonly found in water and soil. During 1963-2003, *A. baumannii* became an increasingly important cause of nosocomial infections, particularly in ICUs (*3*). Treatment of infections attributed to *A. baumannii* can be difficult because the organism has intrinsic resistance to certain antimicrobial agents and has acquired resistance to many others (*3*). In healthcare settings, colonized and infected patients are often the sources of *A. baumannii* infections; however, the ability of the organism to survive for prolonged periods on environmental surfaces also has contributed to protracted outbreaks in these settings (*1*).

In a recent national survey of hospital laboratories, *A. baumannii* infections accounted for only 1.3% of healthcare-associated bloodstream infections (*4*). However, the findings in this report indicate an increase in the number of reported *A. baumannii* bloodstream infections in patients at military medical facilities in which service members injured in Iraq, Kuwait, and Afghanistan are treated.

The sources of the *A. baumannii* that led to the infections described in this report are under investigation. During the Vietnam War, *A. baumannii* was reported to be the most common gram-negative bacillus recovered from traumatic injuries to extremities, and more recent reports have identified *A. baumannii* infections in patients who suffered traumatic injuries, suggesting environmental contamination of wounds as a potential source (*5-8*). Although some of the patients identified in this report had evidence of bloodstream infections at the time of admission to military medical facilities, whether the infections were acquired from environmental sources in the field or during treatment at (or evacuation from) other military medical facilities (e.g., field hospitals) is unknown. Information on patients described in this report is being reviewed to examine potential risk factors for *A. baumannii* bloodstream infection. In addition to exploring traditionally reported risk factors such as antimicrobial exposure, ICU admission, vascular access, and mechanical ventilation, this investigation will involve detailed reviews of geographic locations where injuries occurred and reviews of the movement of injured patients through treatment facilities. An environmental microbiology survey of both indigenous soil samples and treatment facilities is also under way to explore the potential contribution of environmental contamination to this outbreak. Molecular analysis with pulsed-field gel electrophoresis of patient and environmental isolates will be performed to further characterize the potential contribution of environmental contamination.

The bacterial isolates described in this report demonstrated antimicrobial resistance patterns similar to multidrug-resistant *A. baumannii* from ICUs in the United States and Europe (*3,4*). Data from the NNIS system also indicate that resistance among *Acinetobacter* isolates is increasing (CDC, unpublished data, 2004). The high level of antimicrobial resistance is a challenge to clinicians treating *A. baumannii* infections. In some cases, the only ef-

fective antimicrobial agent is colistin (polymyxin E); however, this agent is seldom used because of its high toxicity (*9*). Use of colistin, possibly in combination with other agents, might be effective; however, new agents active against multidrug-resistant *A. baumannii* are needed. Treatment of patients infected with *A. baumannii* is being monitored to determine factors predictive of success and failure, to better understand the impact of antimicrobial resistance on therapy, and to monitor the potential toxicities of treatment regimens that include colistin.

Identification of colonized and infected patients, combined with implementation of infection control measures such as hand-hygiene and contact isolation precautions, might help prevent transmission of this organism within medical facilities (*1*). Interventions recommended by military medical officials have included 1) institution of active surveillance of groin, axillary, and/or wound cultures for *A. baumannii* for all patients; 2) use of contact precautions for colonized or infected patients; and 3) increased availability and use of alcohol-based hand rubs. Laboratory surveillance for *A. baumannii* has been initiated at LRMC, NNMC, WRAMC, and BAMC, and, as much as possible, at each forward-deployed combat support hospital and medical treatment facility in Iraq, Kuwait, and Afghanistan.

Clinicians who treat patients who have recently been hospitalized (especially in ICUs) at the military hospitals described in this report should be aware of the potential for colonization and infection with *A. baumannii*. Additional information on *A. baumannii* is available at http://www.cdc.gov/ncidod/hip. Clinical management and wound care guidelines have been developed to help prevent and mitigate *A. baumannii* infections in military treatment facilities (*10*). Clinicians with specific questions about *A. baumannii* among U.S. service members should contact the U.S. Army Center for Health Promotion and Preventive Medicine, telephone # 800-222-9698.

Acknowledgments

This report is based, in part, on contributions by numerous individuals. Please refer to the full text article available on line at the MMWR website: www.cd.gov/mmwr.

References

1. Urban C, Maurer-Segal, Rahal JJ. Considerations in control and transmission of nosocomial infections due to multi-drug resistant Acinetobacter baumannii. Clin Infect Dis 2003;36:1268-74.

2. Horan TC, Gaynes RP. Surveillance of nosocomial infections. In: Mayhall CG, ed. Hospital epidemiology and infection control. 3rd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2004:1659-702.

3. Van Looveren M, Goossens H, ARPAC Steering Group. Antimicrobial resistance of Acinetobacter spp. in Europe. Clin Microbiol Infect 2004;10:684-704.

4. Wisplinghoff H, Bischoff T, Tallent SM, Seifert H, Wenzel RP, Edmond MB. Nosocomial bloodstream infections in US hospitals: analysis of 24,179 cases from a prospective nationwide surveillance study. Clin Infect Dis 2004;39:309-17.

5. Tong MJ. Septic complications of war wounds. JAMA 1972;219:1044-7.

6. Oncul O, Keskin O, Acar HV, et al. Hospital-acquired infections following the 1999 Marmara earthquake. J Hosp Infect 2002;51:47-51.

7. Heath CH, Orrell CT, Lee RC, Pearman JW, McCullough C, Christiansen KJ. A review of the Royal Perth Hospital Bali experience: an infection control perspective. Australian Infection Control 2003;2: 43-54.

8. Aarabi B. Comparative study of bacteriological contamination between primary and secondary exploration of missile head wounds. Neurosurgery 1987;20:610-6.

9. Levin AS, Barone AA, Penco J, et al. Intravenous colistin as therapy for nosocomial infections caused by multidrug-resistant Pseudomonas aeruginosa and Acinetobacter baumannii. Clin Infect Dis 1999;28:1008-11.

10. Blankenship CL. Guidelines for care of open combat casualty wounds. Available at: http://www.geis.fhp.osd.mil.

Tuberculosis in the U.S. Navy and Marine Corps: A 4-Year Retrospective Analysis 2000-2003

Christy Gamble-Lawson, HM2 Collin Bowman, USN, Wendi Bowman, MPH,
Asha Riegodedios, MSPH, CAPT Bruce Bohnker, MC, USN(FS)
Navy Environmental Health Center

Introduction

Mycobacterium tuberculosis affects over 1.5 billion people worldwide and between 2 and 3 million people die from this disease annually. Due to the likelihood of travel overseas, close living quarters and closed-loop ventilation environments on Naval ships, the risk of transmission of tuberculosis (TB) and other communicable diseases is increased within the Navy and Marine Corps. Such morbidity and potential for widespread transmission underscores the importance of continuing efforts for TB control in the military. The Navy maintains an active TB control program, focusing on early detection and treatment of disease. The objective of this study was to evaluate Navy TB screening practices from 2000-2003.

Methods

Per BUMED Instruction 6224.8, which describes testing, reporting, and treatment requirements for TB, high risk groups require annual Tuberculin Skin Tests (TSTs) while low risk groups require TSTs every three years. All commands are required to submit annual TB reports to their respective Navy Environmental and Preventive Medicine Unit (NEPMU). In turn, the NEPMUs forward the submitted reports to the Navy Environmental Health Center (NEHC) for review and further analysis. Each command submits self-reported aggregate data including the number of permanent personnel, total personnel tested, and total number of new tuberculin reactors.

The self-reported data from 2000-2003 annual TB reports were used for analysis. Active TB case counts were obtained from the Naval Disease Reporting System (NDRS). TST conversion rates were calculated by risk group, geographic area, and service. Reporting compliance and TST testing compliance for high risk groups were assessed. Risk ratios were calculated to test significant differences in TST conversion rates between high risk groups. Risk ratios and 95% confidence intervals were performed using EpiInfo Version 3.3.

Results

Among the 1,836,639 active duty members that were screened from 2000-2003, approximately 1.1% were new reactors. Figure 1 illustrates the trend of confirmed active cases from 1988-2003 broken down by service. Aside from the outbreak on the Wasp in 1998, the rates remained stable for each service. Table 1 shows the number of new reactors identified and the TST conversion rate by year. The percentage of personnel tested has decreased throughout the four years while the TST conversion rate appears to be increasing. Table 2 shows the TST conversion rates for each region or NEPMU. The Eastern US and European regions have the highest conversion.

Figure 2 illustrates the percentage of personnel that were reported on in the Navy and Marine Corps. Reporting compliance decreased for the Navy and increased for the Marine Corps from 2000 to 2003; however, the gap in reporting between the services has decreased. Figure 3 illustrates the percentage of personnel tested by high risk group. The MTFs appear to be decreasing in compliance but this may not be necessarily due to a decrease in testing among personnel. Table 3 shows the TST conversion rate and summary odds ratios by high risk group throughout the 4 years. The recruits show the highest TST conversion rate of 2.9% which was significantly different from the MTFs (OR=1.9, 95% CI: 1.8-1.9.).

Figure 1. Navy and Marine Corps Active Tuberculosis Case Rate, 1988-2003

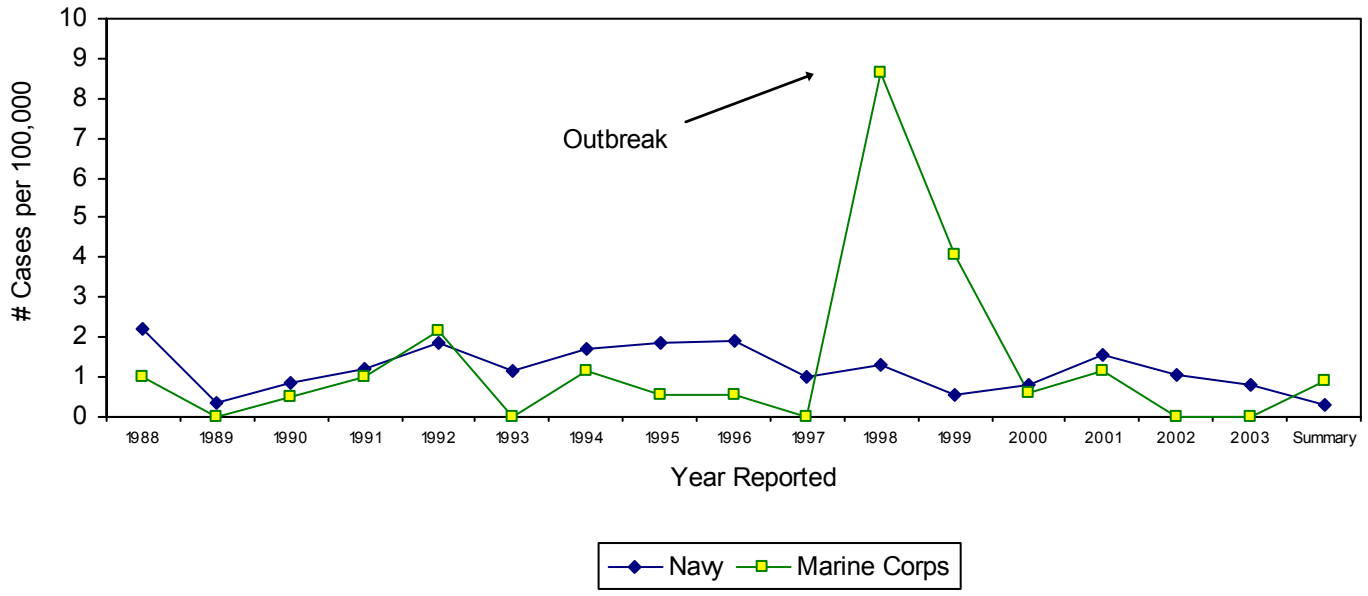


Table 1. Summary of Annual TB Reports for 2000 to 2003

Year	Total Personnel Reported	% Tested	New Reactors Identified	TST Conversion Rate (%)
2000	448,425	74.6	4,311	1.3
2001	484,698	67.0	6,046	1.5
2002	474,551	68.1	4,798	1.6
2003	428,965	64.5	4,638	1.7

Table 2. Summary of reported statistics from NEPMU's from 2000 to 2003

Reporting Unit	Total Personnel Reported	% Tested	New Reactors Identified	TST Conversion Rate (%)
EAST US	1,144,217	69.3	12,852	1.6
WEST US	432,412	71.5	4,089	1.3
PACIFIC	197,265	54.1	1,479	1.4
EUROPE/MED	62,745	45.7	468	1.6

Figure 2. Reporting Compliance by Service

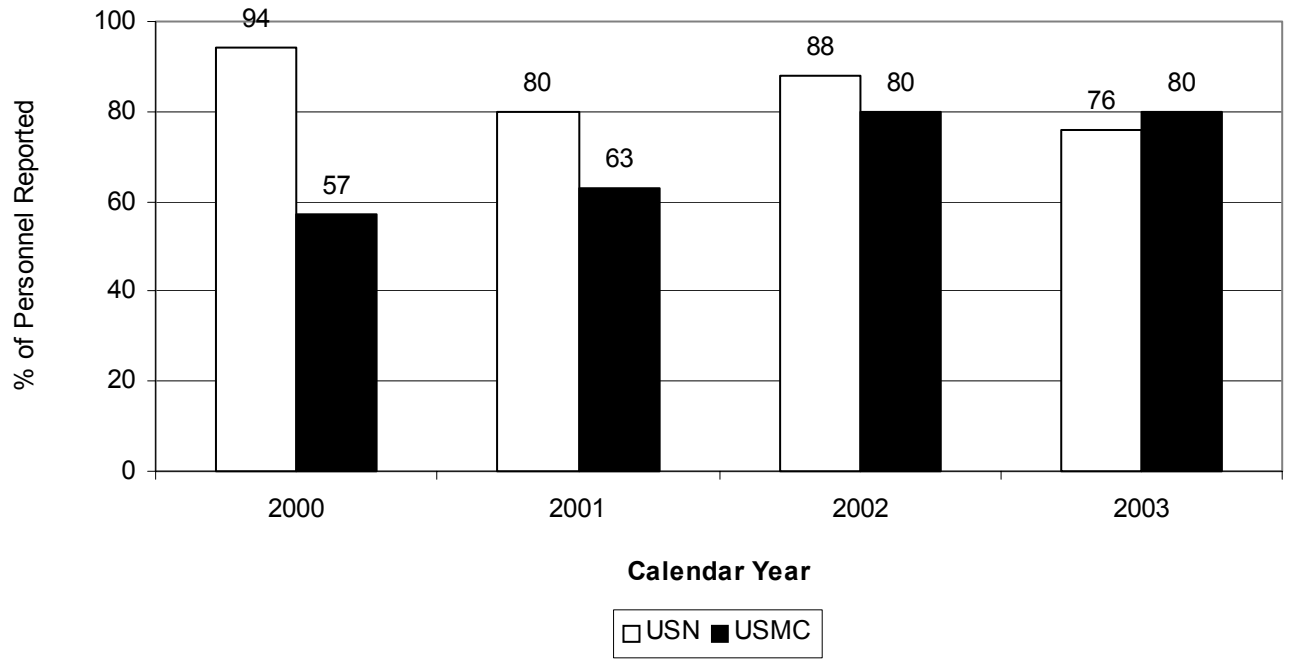


Figure 3. Testing Compliance by Command Type

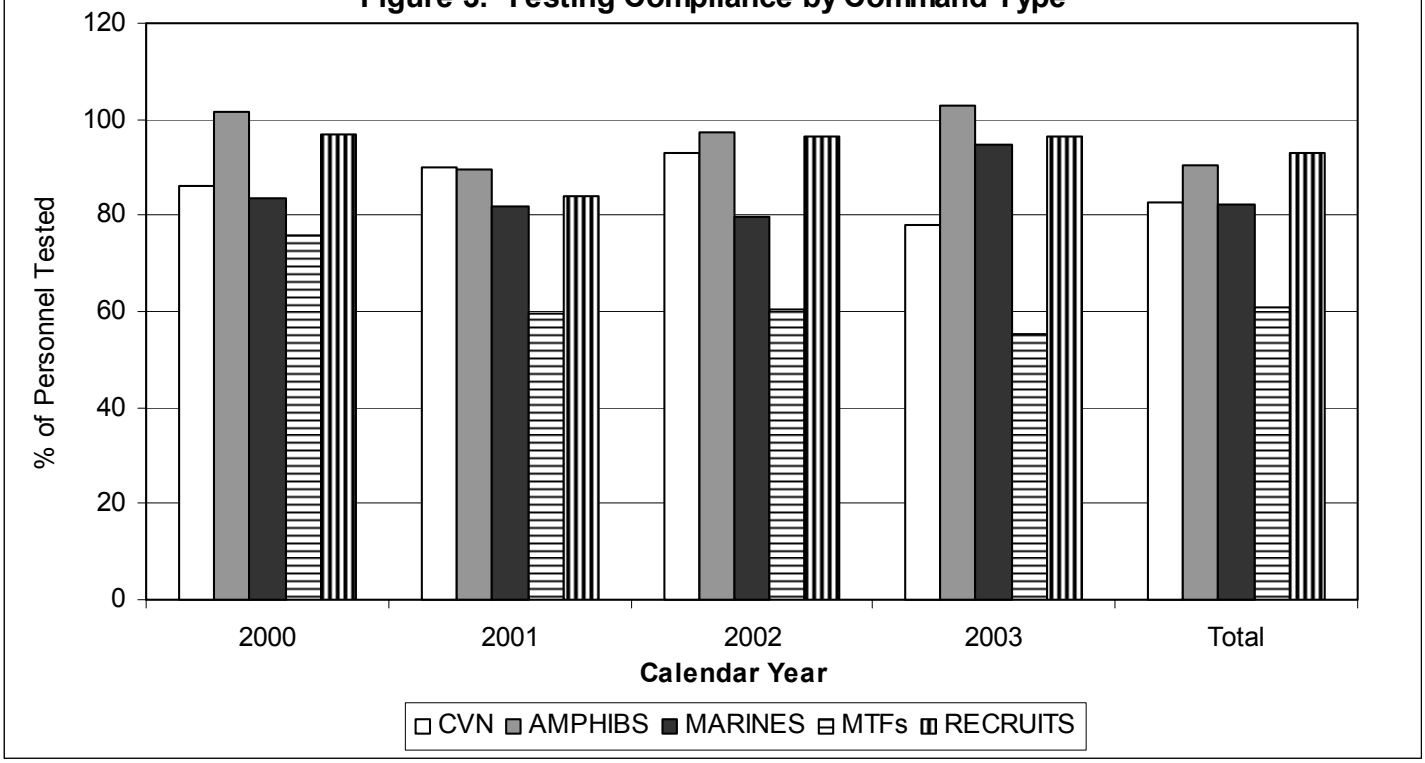


Table 3. Summary Odds Ratios for PPD Conversion 2000-2003

Command Type	% Converted	OR	Lower 95% CI	Upper 95% CI
Recruits	2.9	1.9	1.8	1.9
Carriers	0.5	0.3	0.3	0.3
Amphibious Ships	1.3	0.9	0.9	1.0
US Marine Corps	1.1	0.7	0.6	0.7
MTFs	1.6	1 [REF]	N/A	N/A

Discussion/Conclusion

The annual TB reports allow for the monitoring and the evaluation of TB screening practices throughout the Department of the Navy. The results show that there seems to be a decrease in the percentage of personnel tested while the conversion rates have increased over the years. This could be due to a mixed testing population of people who get tested annually and people who get tested triennially. Compliance was only computed for those commands in which TB reports were received. The results from the analysis indicate a need to further examine the testing compliance among the MTFs. Results also suggest the need to further examine TB screening activities at the recruit depots. Results reported here include only two of the three Navy/Marine Corps recruit training centers. Data suggests that the high conversion rate is largely attributable to one of the recruit training centers. Further investigation is warranted. Lastly, reporting procedures should be assessed in order to ensure that BUMED requirements are clear and address the needs of monitoring TB screening in the Navy.

NAVAL DISEASE REPORTING SYSTEM (NDRS)

Summary of 2004 Data

Tables 1 and 2 display the Medical Event Reports (MERs) received at Navy Environmental Health Center (NEHC). Interested readers may calculate rates among Active Duty by dividing the

Table 1. ACTIVE DUTY Reportable Medical Events, Navy & Marine Corps, Case Frequencies, 01 Jan - 31 Dec 2004

Disease	Total	USN	USMC	Disease	Total	USN	USMC
Amebiasis*	1	1	0	Lyme Disease	5	1	4
Anthrax*	0	0	0	Malaria (specify type) *	7	7	0
Biological warfare agent exposure	0	0	0	Measles*	0	0	0
Bites, rabies vaccine & human rabies IG	93	33	60	Meningitis (aseptic, viral)	28	12	16
Bites, venomous animal	0	0	0	Meningitis (bacterial other than Meningococcus)	1	1	0
Botulism*	0	0	0	Meningococcal disease*	1	0	1
Brucellosis	0	0	0	Mumps	0	0	0
Campylobacteriosis*	5	4	1	Occupational exposure to blood borne pathogens	0	0	0
Carbon Monoxide poisoning*	0	0	0	Onchocerciasis	0	0	0
Chemical warfare agent exposure	0	0	0	Pertussis*	0	0	0
Chlamydia	2074	1270	804	Plague*	0	0	0
Cholera	0	0	0	Pneumococcal pneumonia	0	0	0
Coccidioidomycosis	6	6	0	Poliomyelitis*	0	0	0
Cold injuries	0	0	0	Psittacosis (Ornithosis)	0	0	0
Cryptosporidiosis*	0	0	0	Q Fever*	0	0	0
Cyclospora*	0	0	0	Rabies, clinical human*	0	0	0
Dengue fever*	3	3	0	Relapsing fever	0	0	0
Diphtheria	0	0	0	Rheumatic fever	0	0	0
E. Coli 0157:H7 infection*	0	0	0	Rift Valley fever	0	0	0
Ehrlichiosis	1	0	1	Rocky-Mountain Spotted Fever	3	0	3
Encephalitis*	2	2	0	Rubella*	0	0	0
Filariasis	0	0	0	Salmonellosis*	9	6	3
Giardiasis	11	8	3	Schistosomiasis	0	0	0
Gonorrhea	383	217	166	Shigellosis*	2	0	2
Haemophilus influenza, type b	1	1	0	Smallpox*	0	0	0
Hantavirus infection*	0	0	0	Streptococcal disease, Group A	3	2	1
Heat injuries	211	43	168	Syphilis	49	40	9
Hemorrhagic fever*	0	0	0	Tetanus	0	0	0
Hepatitis, A (acute, symptomatic only)	1	1	0	Toxic shock syndrome	0	0	0
Hepatitis, B (acute, symptomatic only)	26	26	0	Trichinosis	0	0	0
Hepatitis, C (acute, symptomatic only)	10	7	3	Trypanosomiasis	0	0	0
Influenza (confirmed)	0	0	0	Tuberculosis, pulmonary active*	7	3	4
Lead poisoning	0	0	0	Tularemia*	0	0	0
Legionellosis*	1	1	0	Typhoid fever*	0	0	0
Leishmaniasis	6	5	1	Typhus*	0	0	0
Leprosy (Hansen's disease)	0	0	0	Urethritis (non gonococcal)	127	15	112
Leptospirosis*	0	0	0	Varicella	8	7	1
Listeriosis	0	0	0	Yellow fever	0	0	0

* Reportable with 24 hours

Data in the NMSR are provisional, based on reports and other sources of data available to the Navy Environmental Health Center. MERs are classified by date of report. Only cases submitted as confirmed are included.

frequencies by estimated mid-year strength of 375,521 for USN and 176,202 for USMC. Table 1 shows Active Duty only. Table 2 shows non-Active Duty Beneficiaries.

Table 2. BENEFICIARIES Reportable Medical Events, Navy & Marine Corps, Case Frequencies, 01 Jan - 31 Dec 2004

Disease	Total	USN	USMC	Disease	Total	USN	USMC
Amebiasis*	0	0	0	Lyme Disease	1	0	1
Anthrax*	0	0	0	Malaria (specify type) *	0	0	0
Biological warfare agent exposure	0	0	0	Measles*	0	0	0
Bites, rabies vaccine & human rabies IG	94	43	51	Meningitis (aseptic, viral)	25	18	7
Bites, venomous animal	0	0	0	Meningitis (bacterial other than Meningococcus)	4	3	1
Botulism*	0	0	0	Meningococcal disease*	1	1	0
Brucellosis	0	0	0	Mumps	0	0	0
Campylobacteriosis*	2	2	0	Occupational exposure to blood borne pathogens	0	0	0
Carbon Monoxide poisoning*	0	0	0	Onchocerciasis	0	0	0
Chemical warfare agent exposure	0	0	0	Pertussis*	0	0	0
Chlamydia	440	263	177	Plague*	0	0	0
Cholera	0	0	0	Pneumococcal pneumonia	0	0	0
Coccidioidomycosis	2	2	0	Poliomyelitis*	0	0	0
Cold injuries	0	0	0	Psittacosis (Ornithosis)	0	0	0
Cryptosporidiosis*	0	0	0	Q Fever*	0	0	0
Cyclospora*	0	0	0	Rabies, clinical human*	0	0	0
Dengue fever*	0	0	0	Relapsing fever	0	0	0
Diphtheria	0	0	0	Rift Valley fever	0	0	0
E. Coli 0157:H7 infection*	0	0	0	Rocky-Mountain Spotted Fever	1	0	1
Ehrlichiosis	0	0	0	Rubella*	0	0	0
Encephalitis*	1	1	0	Salmonellosis*	44	28	16
Filariasis	0	0	0	Schistosomiasis	0	0	0
Giardiasis	5	5	0	Shigellosis*	5	2	3
Gonorrhea	46	31	15	Smallpox*	0	0	0
Haemophilus influenza, type b	2	1	1	Streptococcal disease, Group A	2	0	2
Hantavirus infection*	0	0	0	Syphilis	10	10	0
Heat injuries	3	3	0	Tetanus	0	0	0
Hemorrhagic fever*	0	0	0	Toxic shock syndrome	1	0	1
Hepatitis, A (acute, symptomatic only)	0	0	0	Trichinosis	0	0	0
Hepatitis, B (acute, symptomatic only)	19	17	2	Trypanosomiasis	0	0	0
Hepatitis, C (acute, symptomatic only)	6	6	0	Tuberculosis, pulmonary active*	6	6	0
Influenza (confirmed)	3	2	1	Tularemia*	0	0	0
Lead poisoning	0	0	0	Typhoid fever*	0	0	0
Legionellosis*	0	0	0	Typhus*	0	0	0
Leishmaniasis	1	1	0	Urethritis (non gonococcal)	0	0	0
Leprosy (Hansen's disease)	0	0	0	Yellow fever*	0	0	0
Leptospirosis*	0	0	0				
Listeriosis	0	0	0				

* Reportable with 24 hours

Navy Tobacco Cessation Efforts - 2004 Report

Mark A. D. Long, Ed.D. and Wendi Bowman, MPH
Navy Environmental Health Center, Portsmouth, VA

Introduction

Tobacco cessation efforts remain a high priority for the Department of Navy. As described in a previous NMSR (Vol 7, No. 1) issue, all health promotion programs are requested to submit six-month tobacco program metrics to the Navy Environmental Health Center. Military Treatment Facilities (MTFs) focus on three intervention efforts: Primary and Early Intervention (prevention, awareness and educational activities), Facilitator Training (to supplement existing staff), and Treatment (group and individual). This report covers the time period of January through June 2004.

Program Highlights

A total of 47 MTF Health Promotion programs submitted metric reports for January to June 2004. This included programs from all Navy bases and most Marine Corps bases. Overall tobacco program accomplishments showed:

- Health Promotion staff provided 585 tobacco awareness, prevention, and educational activities at their respective bases.
- One hundred eighteen (118) new tobacco cessation facilitators were trained during this time period by Health Promotion staff.
- Nicotine dependence treatment was available and 577 tobacco cessation groups were provided at MTF's worldwide. Participants in the group intervention included 2,926 active duty and beneficiaries. A few sites provided individual tobacco cessation treatment.
- The total costs of pharmacotherapy (nicotine replacement therapy and other medications) provided for the treatment of nicotine dependence was $588,541.

Quit Rates

In order to evaluate long-term effectiveness in behavior change, seven-day prevalence rates at three months and six months following completion of treatment are measured. Programs cited several difficulties in reporting this metric including: difficulties locating mobile service members and families, time factors, and lack of understanding of the metric. It is important to note that these rates do not reflect one cohort of individuals, rather, they reflect programs' quit rates at one point in time for all applicable treatment groups. For this reporting period, the seven-day point prevalence rate was 27% (1039 tobacco free individuals) at three months following treatment (Figure 1). This is lower than the prior reporting period three month seven-day point prevalence report rate of 43%.

At six months following group treatment, 590 persons were tobacco free (15% seven-day point prevalence rate). This was also lower than the last six-month report's seven-day point prevalence rate of 33%. The reason for this decline in abstinence and success is unclear. Possible explanations might include participation by heavily addicted tobacco users, facilitator factors, quit rate reporting metric factors, ineffective interventions, lower participation rates, difficulties contacting and following up with patients, and the current stressors of war, deployments and operational tempo.

Figure 2 shows quit rates by service. Service is defined as the base branch of military service on which the Health Promotions office is located. There was an apparent difference in outcome rates following treatment provided at Navy vs. Marine bases for both the three- and six-month follow up time periods. At the three-month time period, the quit rate among Navy commands was 31%, while Marine commands achieved a success rate of 13%. It is important to note, that these results reported for the Marines may not be accurate because not all of the Marine programs reported their tobacco outcome data. The difference in success rates may also be due to a difference in the diver-

sity of the Marine versus Navy populations. Interestingly, the effects seem to equalize and level off at the six-month time period between the Marines and the Navy. The marked decline in the success rates of the Navy, from 31% to 15%, is of concern and seems to be more than expected given the relapse rates of addictive behaviors in general, and nicotine dependence in particular.

Figure 3 shows the quit rate by geography (Navy MTF sites providing treatment within the continental US, or CONUS, and outside of the continental US, or OCONUS). At three months post treatment, there was a slight difference between the two groups, 28% stateside versus 24% overseas. The six-month changes in outcomes were more striking. Stateside outcomes fell to a 14% success rate, while the overseas group experienced a slight and expected decline to 20%. The marked outcome decline stateside may be due to poor or inadequate follow up of patients, to the relative effectiveness of the interventions, or perhaps other factors.

Figure 1. Overall Quit Rates, 7-Day Prevalence, January-June 2004

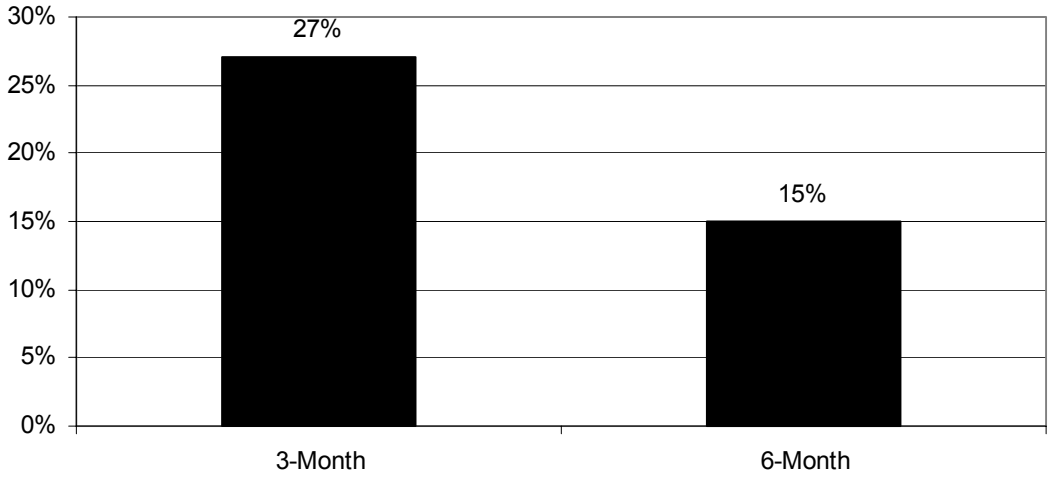
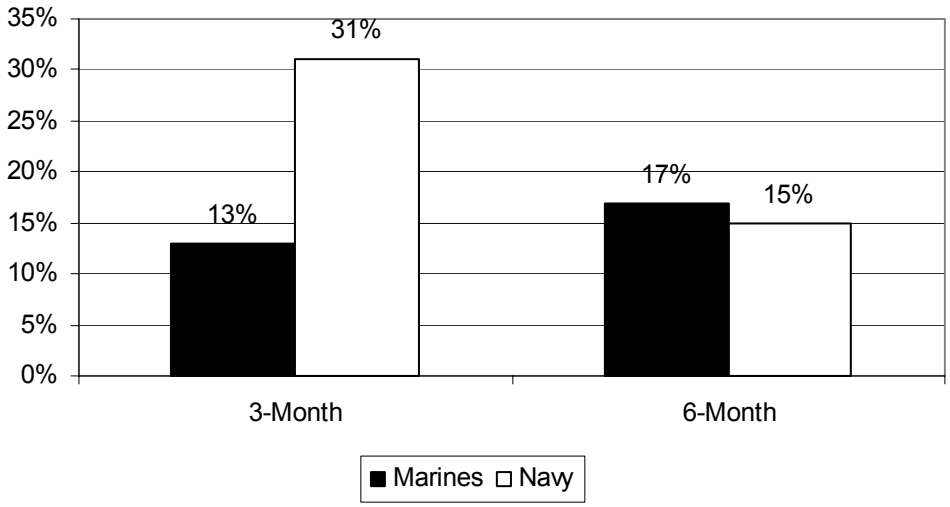
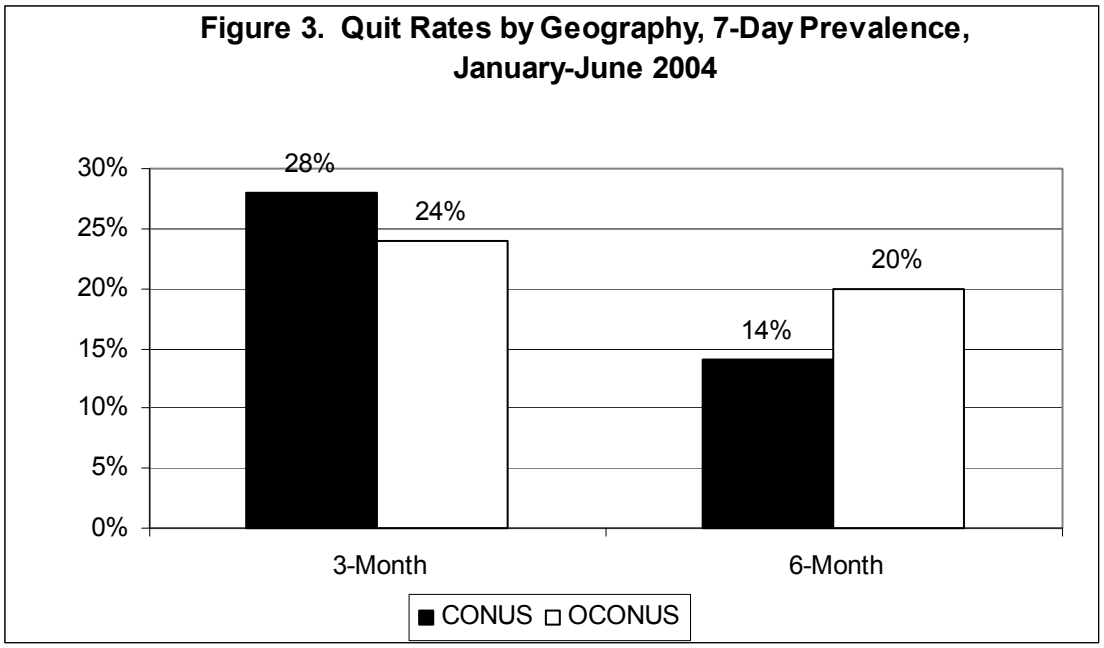


Figure 2. Quit Rates by Service, 7-Day Prevalence, January-June 2004





2004 Reportable Medical Events Trends, Navy and Marine Corps

Christy Lawson and Wendi Bowman, MPH
Navy Environmental Health Center, Portsmouth, VA

Medical Event Reports (MERs) are sent to NEHC from each NEPMU through the Naval Disease Reporting System (NDRS) per BUMEDINST 6220.12A. The MERs are analyzed and tabulated to examine the disease frequencies and trends among the Navy and Marine Corps. This information is used for disease control and prevention.

The following figures represent an analysis of data from NDRS for the calendar year (CY) 2004. The subgroups for the analyses are active duty (AD) and beneficiaries. Beneficiaries consist of non-active duty recipients of healthcare including retirees and dependents. Denominators for estimating rates among AD for each month can be found on the Department of Defense website www.dior.whs.mil/mmid/military/miltop.htm.

Figure 1 shows the vector-borne disease trend for AD throughout the year. There were 41 total cases in 2004. In this report, vector-borne diseases include malaria, mosquito and tick-borne viral encephalitis, Dengue Fever, yellow fever, leishmaniasis, hantavirus, Rocky Mountain Spotted Fever, tularemia, trypanosomiasis, filariasis, typhus, and Lyme disease. As expected, during the summer months of June and August, there appeared to be an increase in the number of cases of vector-borne disease.

Figure 2 illustrates the monthly reports of food and water-borne illnesses broken down by beneficiaries and active duty individuals. Food-and water-borne illnesses include salmonellosis, shigellosis, other food poisoning, giardiasis, E. *coli* 0157:H7, cholera, botulism, amebiasis, campylobacter, cryptosporidiosis, cyclospora, trichinosis, hepatitis A and listeriosis. There were 119 total cases with 75 cases among beneficiaries and 44 cases among active duty members. The peaks in June through September and December were mostly of salmonella cases.

Figure 3 shows the monthly MERs received from Navy aircraft carriers. There were a total of 137 cases reported from carriers in 2004. The peaks in August and November were due to an increase in the number of Chlamydia cases reported. There appeared to be a general increase in reports throughout the year. This could be due to increased reporting as the result of a change in reporting procedures.

The trend for the monthly reports from the Marine Corps separated by beneficiaries and active duty members are shown in Figure 4. There were 1571 total cases reported from the Marine Corps with 1291 among active duty individuals and 280 among beneficiaries.

Analyzing and providing feedback regarding NDRS is an essential part of the prevention process to understand the scope of reportable diseases and conditions and to improve the reporting system. The information presented here is intended to provide a context in which to interpret surveillance data and provide further information on the epidemiology of selected diseases and populations.

Editor's Note: These numbers may not reflect data reported in the "NDRS Summary of 2004 Data tables" due to differences in evaluation dates.

Figure 1. NDRS Monthly Reports of Vector-Borne Diseases, Active Duty 2004

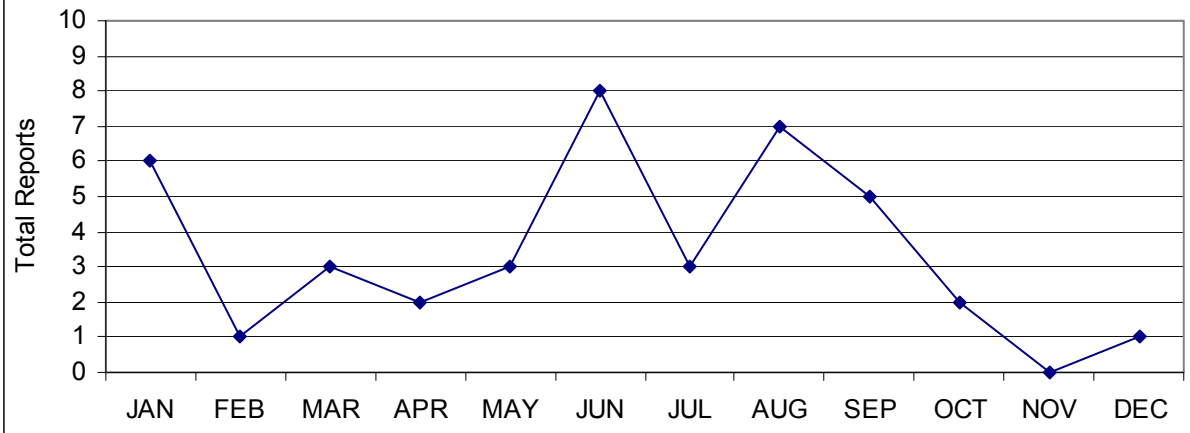


Figure 2. NDRS Monthly Reports of Food-Borne and Water-Borne Illnesses, 2004

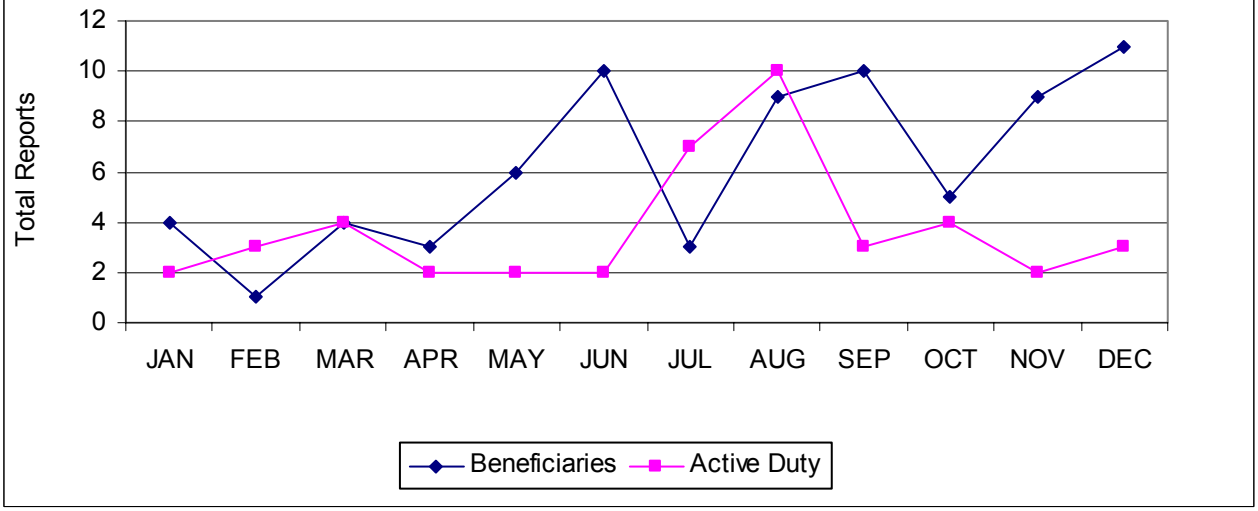


Figure 3. NDRS Monthly Reports for Carriers, 2004

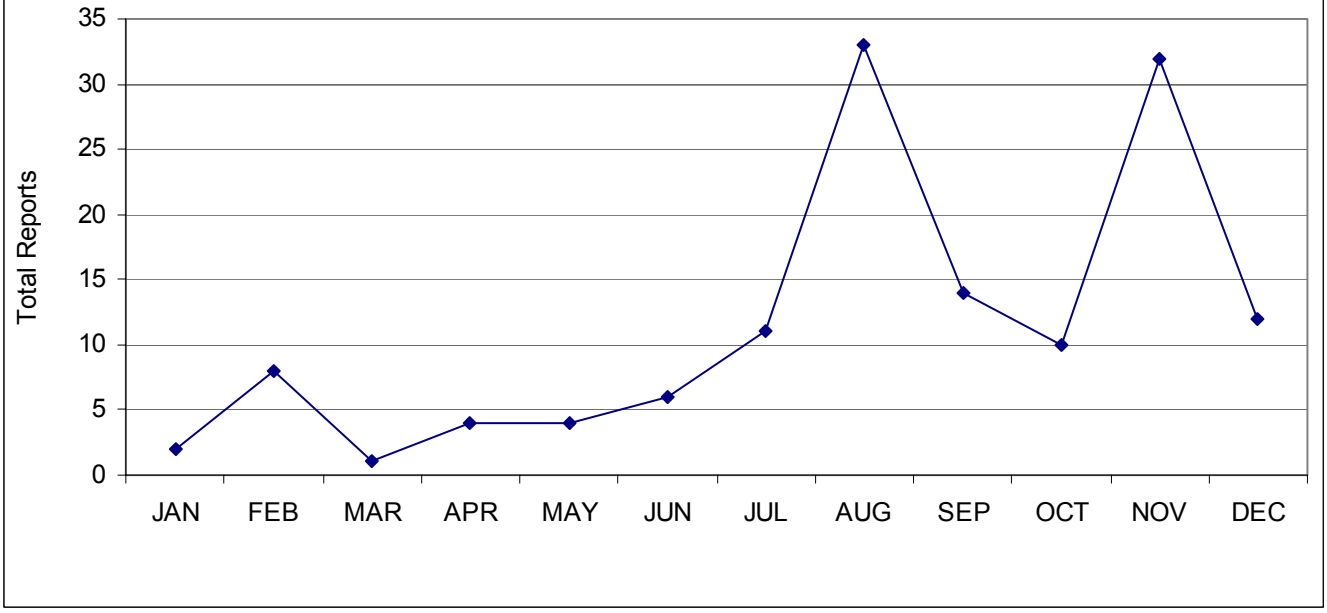
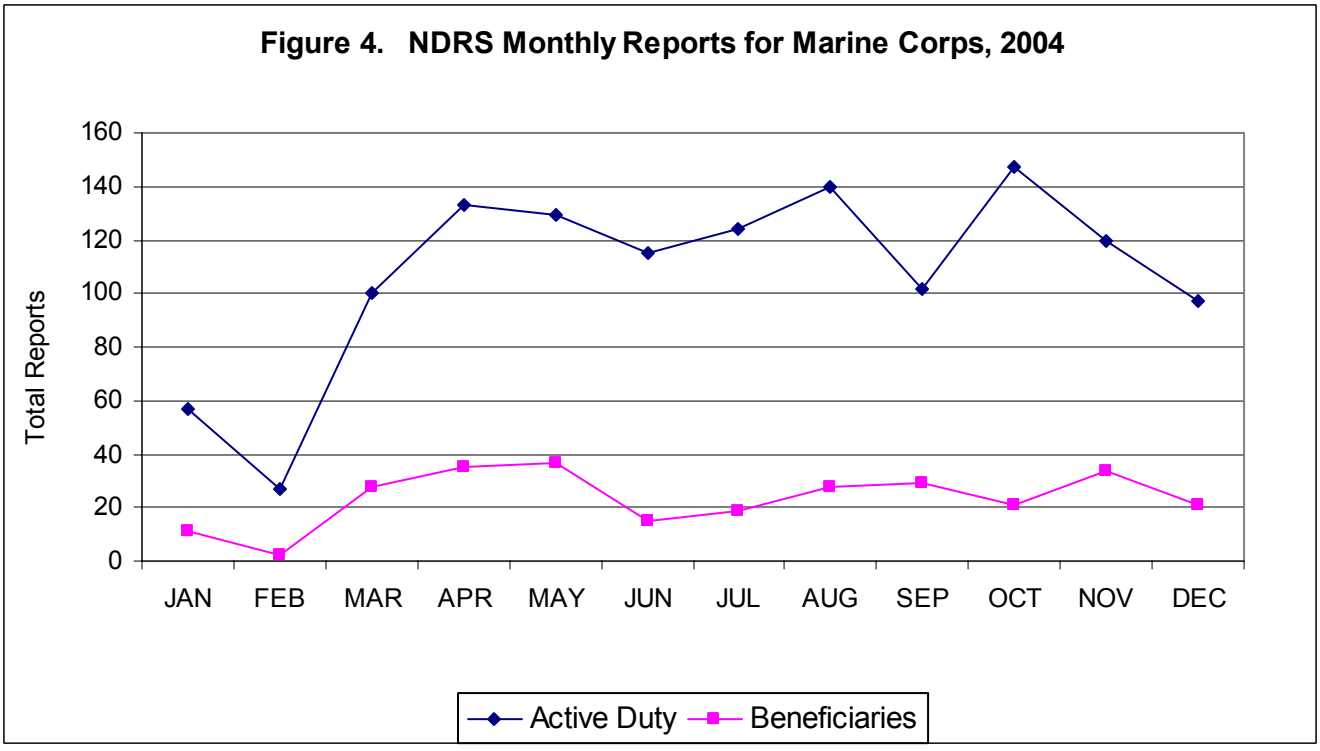


Figure 4. NDRS Monthly Reports for Marine Corps, 2004



Vaccine Adverse Event Reporting System (VAERS) Update

Table 1 displays the total Anthrax VAERS reports to date submitted by each service to the Army Medical Surveillance Activity since the inception of the Anthrax Vaccine Immunization Program. Reactions are classified per DoD Memorandum of 15 October 1999; Policy for Reporting Adverse Events Associated with the Anthrax Vaccine. Data include active duty personnel by service.

Table 2 displays all VAERS reports to date, by vaccine type, submitted to NEHC since the inception of the Smallpox Vaccine Program. Reactions are classified using adverse event guidelines of the Centers for Disease Control and Prevention. Navy and Marine Corps active duty and beneficiaries are included. Reports with missing service information are also included if the reporting facility is a Navy facility. Vaccination/Event categories are mutually exclusive.

Table 1. Anthrax Vaccine Immunization Program VAERS Cumulative Data by Service, Active Duty Members (28 Aug 1998 – 31 Dec 2004)

Service	Classification				Cum. Totals
	Local Reaction			Systemic Reaction	
	Mild	Moderate	Severe		
USA	34	36	15	89	174
USN	10	22	11	75	118
USAF	37	79	58	410	584
USMC	1	13	3	21	38
USCG	0	1	0	0	1

*Excludes 4 VAERS Reports on Anthrax and Non-DoD Reports

Table 2. Navy and Marine Corps VAERS Cumulative Data by Vaccine Type, All Beneficiaries (01 Dec 2002 – 31 Dec 2004)

Vaccination/Event	Classification		Cum. Totals
	Serious*	Non-Serious*	
Anthrax	1	44	45
Smallpox	13	96	109
Anthrax + Smallpox	5	12	17
Other	1	19	20
Cum. Totals	20	171	191

* CDC defines serious adverse events as death, life-threatening illness, hospitalization or prolongation of hospitalization, or permanent disability. A non-serious adverse event then includes any other adverse event reported (<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5201a1.htm>)

A Description of Post-traumatic Stress Disorder Diagnoses Among Active-Duty Military in the Southwest Medical Community

Hillary Kleiner, MPH, Susan I. Woodruff, PhD, Suzanne L. Hurtado, MPH
Naval Health Research Center, San Diego, CA

Editor's note: The following abstract and data were presented as a poster during the 44th Navy Occupational Health and Preventive Medicine Conference.

Post-traumatic stress disorder (PTSD) is a concern for Navy medicine. PTSD affects the quality of life of the individual and family relationships, and it can affect one's military career. It can lead to other long-term medical/behavioral problems, possibly requiring considerable medical, counseling, and pharmacological intervention. However, obtaining current measures of a military community's mental health status is a challenge. Using passive surveillance systems that routinely collect diagnostic data may be a practical approach to

Table 1. Socio-demographic Characteristics of Individuals Diagnosed with Posttraumatic Stress Disorder Among Active Duty Military in the Southwest Medical Community

Characteristic	N (%)
Gender*	
Male	325 (77.4)
Female	95 (22.6)
Age*	18-74
Mean	27
Median	24
Race*	
Asian-Pacific Islander	64 (15.2)
Black	2 (0.5)
Native American	9 (2.1)
White	335 (79.8)
Other	10 (2.4)
Military Branch**	
Marine	252 (62.2)
Navy	153 (37.8)
Status**	
Enlisted	388 (95.8)
Marine	243 (60.0)
Navy	145 (35.8)
Officer	15 (3.7)
Marine	8 (1.8)
Navy	7 (1.6)
Warrant Officer	2 (0.5)
Marine	1 (0.2)
Navy	1 (0.2)

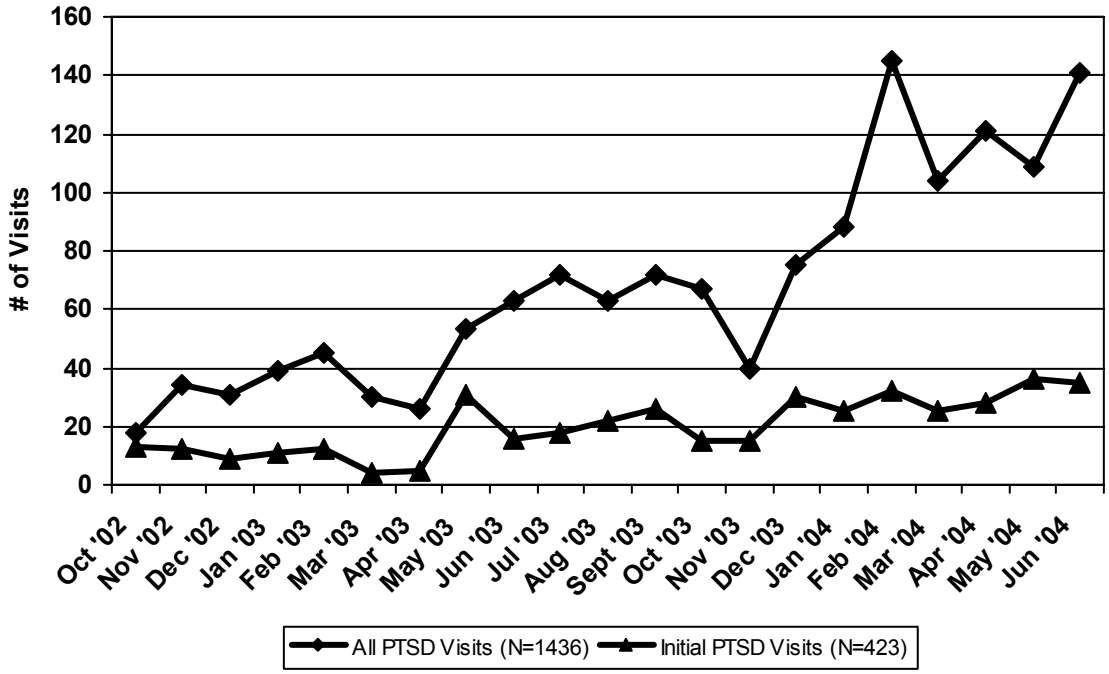
*Gender, race and age not available among 3 individuals.
**Military branch and status not available for 18 individuals.

monitoring changes in PTSD among military personnel.

Data from the automated Medical Data Surveillance System were used to describe PTSD diagnoses among active duty personnel visiting military hospitals and clinics in the Camp Pendleton and San Diego areas. All outpatient visits occurring during the period of October 2002 to June 2004 with an ICD-9 code of 309.81 (Prolonged posttraumatic stress disorder) were examined.

There were 1,436 visits for 423 individuals (mean number of visits per individual was 3.4, with a range of 1-33). PTSD diagnoses accounted for 4.2% of all psychiatric visits. Table 1 shows the distribution of cases by select demographics. Figure 1 shows the frequency of PTSD visits over time. It appears that PTSD cases increased after troops began to return from Operation Iraqi Freedom (although individual level data are needed to examine this specific deployment–PTSD relationship).

Figure 1. PTSD Diagnoses Among Active Duty Navy and Marine Corps Personnel in the Southwest Medical Region for the Period Oct 2002 to June 2004



DEPARTMENT OF THE NAVY
Commanding Officer
Navy Environmental Health Center
620 John Paul Jones Circle Suite 1100
Portsmouth, VA 23708-2103

Official Business